Change 1

Headquarters
Department of the Army
Washington, DC, 1 3 July1998

# Engineer Reconnaissance

1. Change FM 5-170, 5 May 1998, as follows:

| Remove Old Pages | Insert New Pages |
|---|---|
| 5-31 through 5-34 | 5-31 through 5-34 |
| References-1 and References-2 | References-1 and References-2 |

2. A bar (**l**) marks new or changed material.

3. File this transmittal sheet in front of the publication.

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**By Order of the Secretary of the Army:**

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***Chief of Staff***

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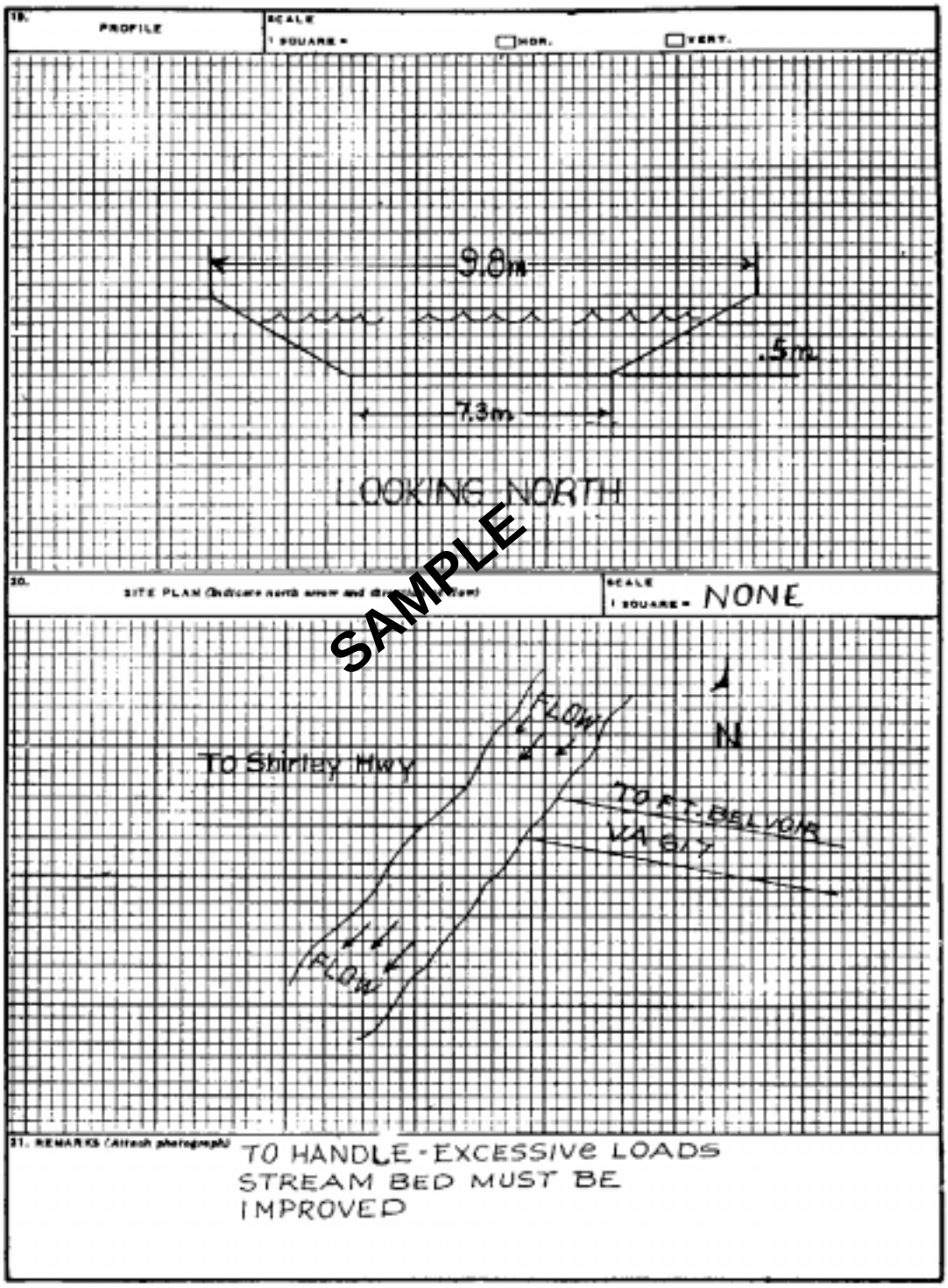



**Figure 5-26. Sample Ford Reconnaissance Report (back)**

recon and pick up divers when the operation is completed. Helicopters may be used to drop teams in the water or place teams on the far shore if the situation permits. Engineer light diving teams routinely conduct river recons at night.

To assist underwater recon teams in maintaining direction, weighted lines (transverse lines) may be placed across the bottom of the water obstacle. Buoys or other floating objects are attached to the lines to indicate the survey area for the underwater recon team(s). When the current is greater than 1.3 meters per second, underwater recon personnel will have difficulty maintaining a position along the line selected. To assist divers, another transverse line, parallel to the original line and with lateral lines connecting both lines, may be placed upstream.

Bottom conditions are easily determined during periods of good visibility and when the water is clear. However, under blackout conditions or when the water is murky, the recon is much slower because swimmers must feel their way across. If the tactical situation permits, diver's may use underwater lanterns.

Environmental conditions (such as depth, bottom type, tides and currents, visibility, and temperature) have an effect on divers, diving techniques, and equipment. The length of time that divers can remain underwater depends on water depth, time at depth, and equipment used. When conducting a recon in a current, swimmers expend more energy, tire more easily, and use their air supply more quickly. In water temperatures between 73° and 85°F, divers can work comfortably in their swimsuits, but will chill in one to two hours if not exercising. In water temperatures above 85°F, the divers overheat. The maximum water temperature that can be endured, even at rest, is 96°F. At temperatures below 73°F, unprotected divers will be affected by excessive heat loss and become chilled within a short period of time. In cold water, the sense of touch and the ability to work with the hands are affected. Air tanks vary in size and govern how long divers can operate. Extra tanks should be available for underwater recon teams, and the facilities to recharge equipment should be located close enough to respond to team requirements.

Units complete a river-recon report to transmit important information about the river's location, near- and far-shore characteristics, and river characteristics. The information is recorded on DA Form 7398-R as shown in Figures 5-27 and 5-28, pages 5-33 and 5-34.

## FERRY RECON

Ferries are considered obstructions to traffic flow and are indicated by the abbreviation "OB" in the route-classification formula. Ferryboat construction varies widely and ranges from expedient rafts to ocean-going vessels. Ferries differ in physical appearance and capacity depending upon the water's width, depth, and current and the characteristics of the traffic to be moved. Ferries may be propelled by oars; cable and pulleys; poles; the stream current; or steam, gasoline, or diesel engines.

### CIVIL FERRIES AND FERRY SITES

Usually, the capacity of a civil ferryboat is expressed in tons and total number of passengers. In addition, it is often assigned an MLC number. Ensure that

# RIVER RECONNAISSANCE REPORT

For use of this form, see FM 5-170. The proponent agency is TRADOC.

DATE: 24 Nov 97

TO (Headquarters requesting recon): Cdr, ATTN: S2, 536th Engr Bn

FROM (Name, grade, and unit of recon officer): MARK A. WILSON, SFC, A Co, 536th Engr Bn

| 1. ROUTE NUMBER | 2. FROM (Initial point) | 3. TO (Terminal point) | 4. DATE/TIME (of signature) |
|---|---|---|---|
| AP HILL 004 | TT 945209 | TT 938180 | 29 0800 Nov 97 |

| 5. MAP SERIES NUMBER | 6. SHEET NUMBER | 7. GRID REFERENCE TYPE | 7. GRID REFERENCE COORDINATES | 8. RECON NUMBER |
|---|---|---|---|---|
| V7345 | 5560 III | 1: 50,000 | TT 945185 | 1 |

| 9. LOCATION OF NEAREST TOWN: DISTANCE | DIRECTION | NAME OF NEAREST TOWN | 10. CROSSING (Name of river or other body of water) |
|---|---|---|---|
| 2KM | SW | Collins Crossing | Cattlet Creek |

11. CHARACTERISTICS OF NEAR SHORE

| BANK HEIGHT | BANK SLOPE | BANK STABILITY | BANK SOIL TYPE | MINES | OBSTACLES (Type) |
|---|---|---|---|---|---|
| 1.8M | 60% | Firm | Grass | None | None |

| SLOPE TO DEPTH OF 2 METERS | SOIL TYPE TO DEPTH OF 2 METERS | MINES TO DEPTH OF 2 METERS | OBSTACLES TO DEPTH OF 2 METERS |
|---|---|---|---|
| 10% | Soft Mud | None | None |

12. CHARACTERISTICS OF RIVER

| GAP WIDTH | VELOCITY (m/sec) | FLOW DIRECTION | BOTTOM COMPOSITION (Mud, sand, gravel/hard-packed or soft) |
|---|---|---|---|
| 143M | 1.5 MPS | SW | ¼ GAP Soft Mud ½ GAP Soft Mud ¾ GAP Soft Mud |

| MAX DEPTH | ANCHORAGE SUITABILITY (Describe) | OBSTACLES |
|---|---|---|
| ¼ GAP 12' ½ GAP 18' ¾ GAP 10' | Very Good. Recommend use of sledge anchors | None |

13. CHARACTERISTICS OF FAR SHORE

| BANK HEIGHT | BANK SLOPE | BANK STABILITY | BANK SOIL TYPE | MINES | OBSTACLES (Type) |
|---|---|---|---|---|---|
| 0.8M | 90% | Firm | Grass | None | None |

| SLOPE TO DEPTH OF 2 METERS | SOIL TYPE TO DEPTH OF 2 METERS | MINES TO DEPTH OF 2 METERS | OBSTACLES TO DEPTH OF 2 METERS |
|---|---|---|---|
| 90% | Soft Mud | None | Stump located at 3' |

REMARKS: (Description of far- and near-shore approaches/assembly areas/available cover and concealment/overall assessment of crossing-site potential for freezing over or flooding.)

Near-shore approach is approx 150M wide with firm soil and grass but no overhead cover.

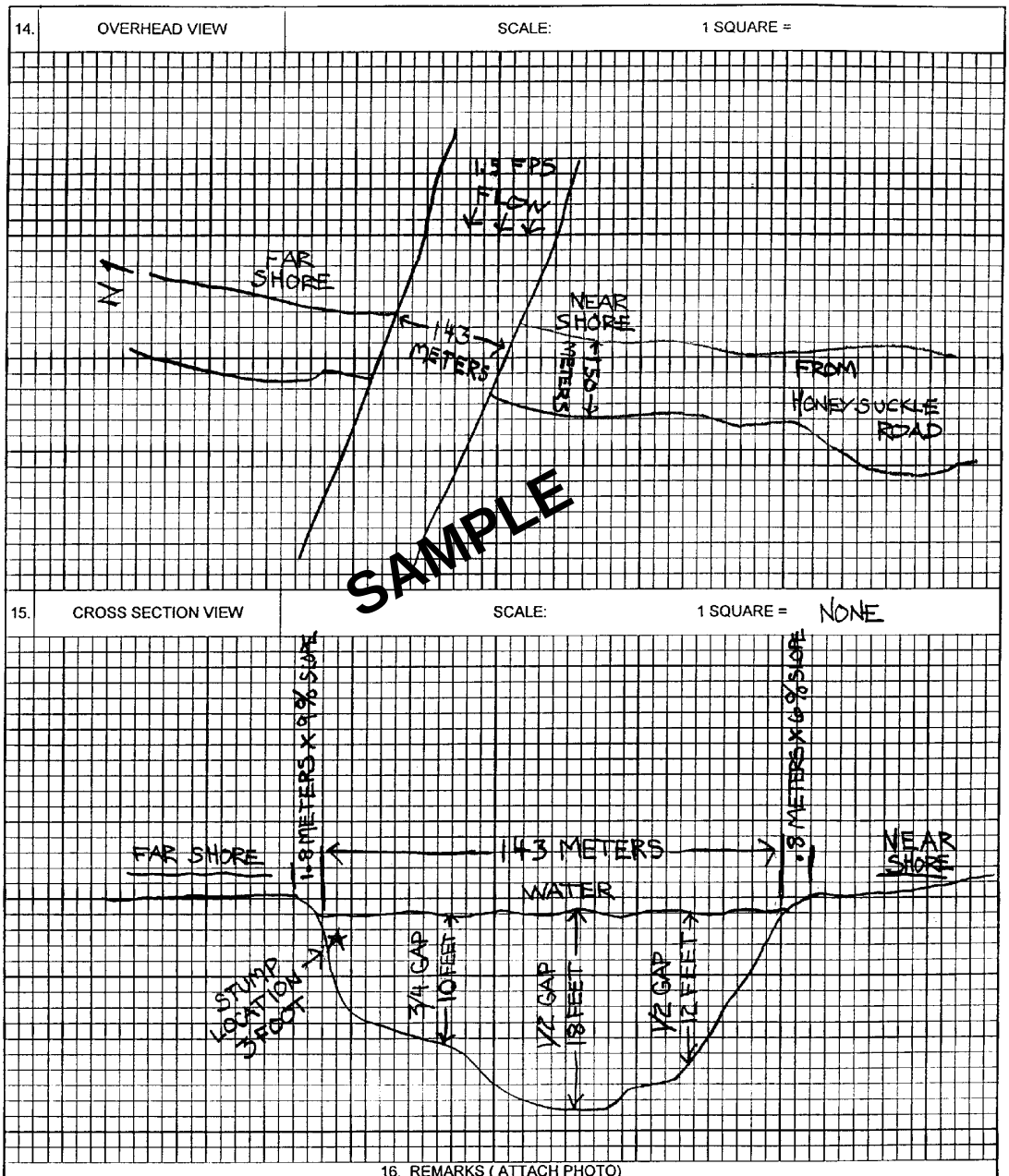
Far-shore approach is approx 80M wide with firm soil and grass. NOTE: Stump located at 3', measuring 26" in diameter. Stump needs to be removed before far shore can be utilized.

Crossing site has no history of flooding, but has potential for freezing over in late January thru March.



DA FORM 7398-R, JUN 98

Figure 5-27. Sample River Reconnaissance Report (front)




DA FORM 7398-R, JUN 98 (Back)

**Figure 5-28. Sample River Reconnaissance Report (back)**

you record the capacity of each ferry when more than one is used at a given site. The ferries may vary in capacity.

# References

## SOURCES USED

These are the sources quoted or paraphrased in this publication.


Army Publications

DA Pam 738-750. *Functional Users Manual for the Army Maintenance Management System (TAMMS).* 1 August 1994.
FM 1-114. *Tactics, Techniques, and Procedures for the Regimental Aviation Squadron.* 20 February 1991.
FM 5-71-2. *Armored Task-Force Engineer Combat Operations.* 28 June 1996.
FM 5-71-3. *Brigade Engineer Combat Operations (Armored).* 3 October 1995.
FM 5-71-100. *Division Engineer Combat Operations.* 22 April 1993.
FM 5-114. *Engineer Operations Short of War.* 13 July 1992.
FM 5-250. *Explosives and Demolitions.* To be published within 6 months.
FM 5-446. *Military Nonstandard Fixed Bridging.* 3 June 1991.
FM 6-20-40. *Tactics, Techniques, and Procedures for Fire Support for Brigade Operations (Heavy).* 5 January 1990.
FM 6-30. *Tactics, Techniques, and Procedures for Observed Fire.* 16 July 1991.
FM 17-95. *Cavalry Operations.* 24 December 1996.
FM 17-95-10. *The Armored Cavalry Regiment and Squadron.* 22 September 1993.
FM 17-98. *Scout Platoon.* 9 September 1994.
FM 20-32. *Mine/Countermine Operations.* To be published within 6 months.
FM 21-26. *Map Reading and Land Navigation.* 7 May 1993.
FM 34-1. *Intelligence and Electronic Warfare Operations.* 27 September 1994.
FM 34-2. *Collection Management and Synchronization Planning.* 8 March 1994.
FM 34-2-1. *Tactics, Techniques, and Procedures for Reconnaissance and Surveillance and Intelligence Support to Counterreconnaissance.* 19 June 1991.
FM 34-130. *Intelligence Preparation of the Battlefield.* 8 July 1994.
FM 71-1. *Tank and Mechanized Infantry Company Team.* 22 November 1988.
FM 71-2. *The Tank and Mechanized Infantry Battalion Task Force.* 27 September 1988.
FM 71-3. *The Armored and Mechanized Infantry Brigade.* 8 January 1996.
FM 90-13. *River Crossing Operations.* 30 September 1992.
FM 90-13-1. *Combined Arms Breaching Operations.* 28 February 1991.
FM 100-5. *Operations.* 14 June 1993.
FM 100-7. *Decisive Force: The Army in Theater Operations.* 31 May 1995.
FM 100-16. *Army Operational Support.* 31 May 1995.
FM 101-5. *Staff Organization and Operations.* 31 May 1997.
FM 101-5-1. *Operational Terms and Graphics.* 30 September 1997.

Standardization Agreements

STANAG 2010. *Military Load Classification Markings.* 18 November 1980.
STANAG 2021. *Military Computation of Bridge, Ferry, Raft and Vehicle Classifications.* 18 September 1990.
STANAG 2027. *Marking of Military Vehicles.* 18 December 1975.
STANAG 2154. *Regulations for Military Motor Vehicle Movement by Road.* 19 June 1992.
STANAG 2174. *Military Routes and Route/Road Networks.* 25 February 1994.

STANAG 2253. *Roads and Road Structures.* 29 January 1982.
STANAG 2269. *Engineer Resources.* 14 May 1979.

## DOCUMENTS NEEDED

These documents must be available to the intended users of this publication.

Department of the Army Forms
DA Form 1248. *Road Reconnaissance Report.* 1 July 1960.
DA Form 1249. *Bridge Reconnaissance Report.* 1 July 1960.
DA Form 1250. *Tunnel Reconnaissance Report.* 1 January 1955.
DA Form 1251. *Ford Reconnaissance Report.* 1 January 1955.
DA Form 1252. *Ferry Reconnaissance Report.* 1 January 1955.
DA Form 1711-R. *Engineer Reconnaissance Report.* May 1985.
DA Form 2028. *Recommended Changes to Publications and Blank Forms.* 1 February 1974.
DA Form 2404. *Equipment Inspection and Maintenance Worksheet.* 1 April 1979.
DA Form 2408-14. *Uncorrected Fault Record.* June 1994.
DA Form 7398-R. *River Reconnaissance Report.* June 1998.

## READINGS RECOMMENDED

These readings contain relevant supplemental information.

Army Publications
FM 3-4. *NBC Protection.* 29 May 1992.
FM 3-5. *NBC Decontamination.* 17 November 1993.
FM 3-19. *NBC Reconnaissance.* 19 November 1993.
FM 19-40. *Enemy Prisoners of War, Civilian Internees, and Detained Persons.* 27 February 1976.